

Remarks

Applicants request reconsideration of the present application in view of the amendments and the following remarks.

35 U.S.C. 102(e) Rejection over Sharp

Claims 1-2, 4-10, 12-13, 15-20, and 23-26 were rejected under 35 U.S.C. 102(e) as allegedly being anticipated by WO 02/063294 to Sharp et al. (Sharp). Applicants traverse this rejection and request that it be withdrawn.

Independent Claim 1

Claim 1 recites a method for leak testing the ventilation system of an environmental enclosure, the method comprising:

- inducing air surrounding the enclosure to flow through the ventilation system and into the enclosure to establish positive pressure in the enclosure;
- filtering a tracer gas from the air flowing into the enclosure with a gas filter positioned in the ventilation system, the tracer gas comprising a gas naturally present in the air surrounding the enclosure; and
- detecting for the presence of the tracer gas inside the enclosure.

Sharp does not teach or suggest the above recited language of claim 1. Sharp discloses an air quality monitoring system that can be placed in a building. Referring to FIG. 1, the system includes an air monitoring unit 102 that receives air samples from locations 108 in the building. Within the air monitoring unit 102, air can pass through a dust filter 341, gas sensors 134, and through a filter 136 to remove particles or hazardous or undesirable gases.

Sharp's air monitoring unit 102, including the filters 341, 136, are not positioned in the ventilation system of a building. As Sharp is presently understood, the monitoring unit would be placed at a convenient location inside a building (*e.g.*, inside a room that is to be monitored) in order to monitor air quality inside the room and to allow for user interface with the unit. Thus, Sharp does not teach or suggest "filtering a tracer gas from the air flowing into the enclosure with a gas filter positioned in the ventilation system," as recited in claim 1.

Furthermore, Sharp does not teach or suggest filtering a tracer gas that is naturally present in the air surrounding the enclosure. As noted by the Office action, the system can include gas sensors 134 that can detect various gases in the environment, such as carbon dioxide. (Applicants note that Sharp does not mention that the sensors detect nitrogen or oxygen, as stated

in the Office action; see page 14, lines 4-13 of Sharp.) Although Sharp discloses a sensor for detecting carbon dioxide, nowhere does Sharp disclose filtering the carbon dioxide with the filters 341, 136. The upstream filter 341 is a dust filter. The downstream filter 136 is used to filter particles or hazardous or undesirable gases. Carbon dioxide is a non-hazardous gas (at least in concentrations typically found in buildings where Sharp's system would be used) and therefore there is no teaching or suggestion in Sharp for filtering carbon dioxide from air. Sharp also explains that the gas sensors 134 can detect carbon monoxide, VOC's, NO, NO₂, and ammonia. However, these gases are not naturally present in air.

Accordingly, for at least the foregoing reasons, claim 1 is not anticipated or rendered obvious by Sharp and therefore should be allowed.

Dependent Claims 2-11

Dependent claims 2-11 depend from claim 1 and are patentable for the reasons given above in support of claim 1 and because each dependent claim recites an independently patentable combination of features.

Applicants note that the Office action does not address the relevance of Sharp with respect to several of the dependent claims. For example, claim 7 further recites: "determining the expected concentration of tracer gas inside the enclosure due to losses through the filter; measuring the lowest achievable concentration of tracer gas inside the enclosure; detecting for the presence of leaks in the ventilation system by comparing the lowest achievable concentration of tracer gas inside the enclosure to the expected concentration of tracer gas inside the enclosure due to losses through the filter." Dependent claim 8 recites specific acts for determining whether leakage of a ventilation system is less than a predetermined leakage. If the rejection is not withdrawn, Applicants respectfully request the Examiner to explain where Sharp discloses the limitations of claims 7 and 8.

Independent Claim 12

Claim 12 recites a method for leak testing the ventilation system of an environmental enclosure, the method comprising:

placing a filter in the ventilation system for filtering a tracer gas from the air flowing through the filter, the tracer gas comprising a gas naturally present in the air surrounding the enclosure;

inducing air outside of the enclosure to flow through the ventilation system and into the enclosure so as to establish positive pressure inside the enclosure;
measuring the concentration of tracer gas inside the enclosure; and
detecting for the presence of leaks in the ventilation system from the concentration of the tracer gas inside the enclosure.

Sharp discloses an air quality monitoring system for monitoring air quality inside a building. As noted by the Office action, the system can include gas sensors 134 that can detect various gases such as carbon dioxide. However, Sharp does not teach or suggest at least the following features of claim 12: (1) placing a filter in a ventilation system for filtering a tracer gas from the air flowing through the filter, (2) measuring the concentration of tracer gas inside an environmental enclosure (e.g., a room), or (3) detecting for the presence of leaks in the ventilation system from the concentration of the tracer gas inside the enclosure.

In order to detect for the presence of leaks in a ventilation system, the filter would need to be positioned upstream of the device that measures the concentration of the tracer gas in the enclosure in order to discriminate between tracer gas that flows into the enclosure via the inlet of the ventilation system and tracer gas that enters the enclosure via leaks in the ventilation system. The presence of leaks is revealed if the concentration of the tracer gas downstream of the filter is greater than what is expected to be removed by the filter; in other words, leaks are revealed if the tracer gas by-passes the filter and flows into the enclosure via leaks in the ventilation system. Even assuming for argument's sake that Sharp's air monitoring unit 102 is positioned in a ventilation system (which is not the case), the unit still could not (and would not) be capable of detecting for the presence of leaks in the ventilation system. Since the gas filter 136 is positioned downstream of the gas sensor 134, the sensor does not (and cannot) discriminate between carbon dioxide that flows into the enclosure via the inlet of the ventilation system and carbon dioxide that enters the enclosure via leaks in the ventilation system.

Accordingly, for at least the foregoing reasons, claim 12 is not anticipated or rendered obvious by Sharp and therefore should be allowed.

If this rejection is not withdrawn, Applicants respectfully request the Examiner to explain where Sharp discloses the limitations of claim 12.

Dependent Claims 13-17

Dependent claims 13-17 depend from claim 12 and are patentable for the reasons given above in support of claim 12 and because each dependent claim recites an independently patentable combination of features.

Independent Claim 18

Claim 18, as amended, recites a system for leak testing the ventilation system of an environmental enclosure used in a polluted atmosphere, the system comprising:

a gas filter configured to fit in the ventilation system of the enclosure and capable of filtering a tracer gas from air flowing through the filter, the tracer gas comprising a gas naturally present in the air surrounding the enclosure; and
a gas detector positioned downstream of the gas filter for detecting the presence of the tracer gas inside the enclosure. (added language underlined.)

Sharp does not teach or suggest a system for leak testing a ventilation system of an enclosure. At best, Sharp discloses an air quality monitor that includes a gas sensor 134 and a gas filter 136 downstream of the sensor. The monitor is not placed in an ventilation system and the gas sensor is not positioned downstream of the gas filter, as required in claim 18.

Accordingly, for at least the foregoing reasons, claim 18 is not anticipated or rendered obvious by Sharp and therefore should be allowed.

Dependent Claims 19-26

Dependent claims 19-26 depend from claim 18 and are patentable for the reasons given above in support of claim 18 and because each dependent claim recites an independently patentable combination of features.

35 U.S.C. 102(b) Rejection over Sharp

Claims 1-2, 4-10, 11-13, 15-20, and 23-26 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by U.S. Patent No. 2,996,661 to Roberts (Roberts). Applicants traverse this rejection and request that it be withdrawn.

Roberts discloses a “sniffing” type leak detecting probe 11 that is placed near welds, joints, seams, and other areas of suspected leakage in vessels, pipes and other closed systems containing a tracer gas (typically a Halogen gas). The probe draws air into an internal detector to detect for the presence of a tracer gas in the air in the surrounding environment.

As to claim 1, Roberts does not teach or suggest filtering a tracer gas from the air flowing into an enclosure with a gas filter positioned in a ventilation system. If Roberts' probe device can be used to detect leaks in a ventilation system, it would be placed outside of the ventilation system near areas of suspected leakage (e.g., at the seams between separate portions of ductwork). Furthermore, Roberts does not teach or suggest filtering a tracer gas comprising a gas naturally present in the air. As noted above, Roberts teaches the use of a tracer gas in the halogen family. The Examiner contends that the halogen family includes argon, which is a naturally occurring component of air. Applicants disagree. The halogen family includes chlorine, bromine, iodine and astatine. If this rejection is not withdrawn, Applicants respectfully request that the Examiner provide scientific evidence to support the position that argon is part of the halogen family.

As to claim 12, Roberts neither teaches nor suggest at least the following: (1) placing a filter in a ventilation system for filtering a tracer gas from the air flowing through the filter, (2) measuring the concentration of tracer gas inside an environmental enclosure (e.g., a room), or (3) detecting for the presence of leaks in the ventilation system from the concentration of the tracer gas inside the enclosure. Even if Roberts teaches placing a gas filter in a ventilation system of an enclosure to filter a tracer gas (which it does not), air would easily flow around the probe 11 and into the enclosure, making it impossible to detect for the presence of leaks in the ventilation system.

As to claim 18, Roberts neither teaches nor suggests: (1) a gas filter configured to fit in the ventilation system of the enclosure and capable of filtering a tracer gas from air flowing through the filter, the tracer gas comprising a gas naturally present in the air surrounding the enclosure; or (2) a gas detector positioned downstream of the gas filter for detecting the presence of the tracer gas inside the enclosure.

Accordingly, for at least the foregoing reasons, claims 1, 12, and 18 are not anticipated or rendered obvious by Roberts and therefore should be allowed.

Dependent claims 2, 4-10, 11, 13, 15-17, 19-20, and 23-26 depend from claims 1, 12, and 18 and are patentable for the reasons given above in support of their base claims and because each dependent claim recites an independently patentable combination of features.

35 U.S.C. 103(a) Rejection

Claims 3, 14, 21 and 22 were rejected under 35 U.S.C. 103(a) as allegedly being obvious from Sharp or Roberts in view of U.S. Patent No. 4,879,999 to Leiman (Leiman). Applicants traverse this rejection and request that it be withdrawn.

Claims 3, 14, 21 and 22 depend from claims 1, 12 and 18 and therefore include all of the limitations of their base claims. Leiman does not make up for the deficiencies of Sharp or Roberts discussed above. Accordingly, Sharp, Roberts, or Leiman (either alone or in combination) neither teach nor suggest the limitations of claims 3, 14, 21 and 22 and therefore the 35 U.S.C. 103(a) rejection should be withdrawn.

Conclusion

For at least the foregoing reasons, the application is in condition for allowance and such action is respectfully requested. If any issues remain concerning this application, the examiner is invited to contact the undersigned attorney.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 595-5301

By /Jeffrey B. Haendler/
Jeffrey B. Haendler
Registration No. 43,652